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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,930	01/07/2002	Ian L. Critchley	H0002460	4065

7590 03/25/2003

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EXAMINER
KIM, TAE JUN

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/041,930	Applicant(s) CRITCHLEY, IAN L.
	Examiner Ted Kim	Art Unit 3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12 and 15-30* is/are allowed.

6)☒ Claim(s) *1-11,13,14 and 31-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because:

- In Figure 3, it is unclear whether the leadline for 78 is drawn to the correct location -- note 78 is supposed to be the exit profile control airstream and in figure 2 (see page 12, lines 21+), the exit profile control airstream 34 is shown mixing with the secondary stream 28 **before** mixing with the combustor exhaust 56. Clarification is required.
- in Figure 4, element number 86 should have a leadline drawn to the walls (see page 13, line 1).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: on page 12, line 1, "not shown" should be – not labeled – as the compressor is in fact shown.

Appropriate correction is required.

Claim Objections

4. Claims are objected to because of the following informalities:

- Claim 31, line 6, "one a" should be – one --. Appropriate correction is required.
- Claim 33, "a cooling and dilution flow port" are not discussed in the specification and it is not clear as to what applicant's are referring to.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, because the specification, does not reasonably provide enablement for in claim 1, line 18, "introducing said effluent gas [from the main combustor] to at least one combustor." The specification does not disclose the effluent gas from the main combustor being introduced into another combustor. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

6. Claims 1-11, 13, 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 1, lines 18-20 "at least one combustor" does not have any relationship with the "main combustor" previously specified. If applicant intends these to be one and the same the relationship should be more clearly set forth. See also claims 2, 3, 7, 13, 14.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 31, 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Lipinski et al (6,125,625). Lipinski et al teach a system for combustion hydrocarbon fuel comprising an air supply for supplying air from a compressor 12 to the air inlet; an air inlet for entrance of said air mixture from said compressor; at least one air staging valve (unlabeled, between 12 and 15), wherein the air staging valve directs air to a catalyst module (in preburner 19) and a bypass manifold (air from 20 enters 22 where a manifold is formed) for receiving air from the air staging valve, at least one catalyst exit duct (see element T4) for delivering fuel and air from the catalyst module to a main combustor 24; and an exit for delivering the effluent gas stream generated by the main combustor 24 to a turbine 14.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 4-11, 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipinski et al (6,125,625) in view of Greenwood (6,082,093) and/or Colket, III et al (5,235,804) of the IDS. Lipinski et al teach a method of combusting hydrocarbon fuel comprising: compressing air in a compressor 12, controllably dividing air staging valve air stream into at least one bypass flow stream 20 and at least one main combustion air stream (see T1, T2, T3, T4), introducing said main combustion air stream into a fuel preparation section 17, wherein main fuel is injected and mixed to form a pre-catalyst mixture: introducing the pre-catalyst mixture into a catalyst section 19 where in a catalyst partially oxidizes the fuel from 29 in a catalytic oxidation stage generating heat and a partial oxidation stream (see T4), combustion the partial oxidation product stream in a main (at least one) combustor 24, at a condition at which appreciable thermal NOx are not formed (see col. 7, lines 17-23), introducing the bypass air stream 20 to the main (at least one) combustor 24; and wherein the temperature and composition of the partial oxidation stream are selected to control the amounts of NOx in the main combustor (col. 7, lines 17-23) and the stability of the flame in the main combustor (col. 8, lines 37-41). Alternately, the catalytic oxidation stage can be interpreted to be within 24 and combined

with the main combustor. Lipinski et al do not teach using a secondary air stream delivered to the combustor. Colket, III et al teach delivery of a secondary (dilution) air stream 28 for dilution of the combustor products and where the main combustor (primary zone and secondary zone) are located downstream of the catalytic oxidation zone 33, which is controlled to control the NOx formed in the main combustor and composition of the partial oxidation products to control stability (col. 5, lines 5-37). Greenwood et al teach a catalytic combustor with a catalytic zone 72 and a main combustion zone downstream 209 where secondary (dilution) air from manifold 252' is delivered to the combustor (see col. 8, lines 66 and following). It would have been obvious to one of ordinary skill in the art to deliver secondary air as taught by Colket, III et al and/or Greenwood et al, in order to dilute the combustion gases and provide for enhanced temperature control over the combustion gases entering the turbine. Furthermore, it would have been obvious to one of ordinary skill in the art to replace the [black box] catalytic combustor 24 of Lipinski et al, with a catalytic/main combustor with secondary air injection, as taught by Colket, III et al and/or Greenwood et al, in order to utilize a typical catalytic combustor configuration used for low emissions and/or high efficiency. It is noted that the catalysts claimed are typical of those in the art, see Colket, III et al. (col. 4, lines 14+) and the fuels are also either liquid or gas (col. 3, lines 31-40). It would have been obvious to one of ordinary skill in the art to employ liquid or gas fuels and the catalysts claimed, as entirely being the conventional practice in the art.

Allowable Subject Matter

11. Claims 2, 3, 13, 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claims 12, 15-30 are allowed.

Contact Information

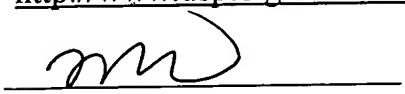
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 703-308-2631. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 703-872-9302 for Regular faxes and 703-872-9303 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached on 703-308-0102.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861.

General inquiries can also be directed to Technology Center Customer Service Office at 703-306-5648 or the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at http://www.uspto.gov/main/patents.htm



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